



CALIFORNIA ACADEMY OF SCIENCES 1999–2000



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*To  
Explore  
and Explain  
the Natural  
World*





## A LETTER FROM THE EXECUTIVE DIRECTOR

This past year was among the most momentous in the California Academy of Sciences' history. Prompted by severe problems with our aging facilities, and encouraged by the City to seek an \$87 million bond, we went to voters last March and won public funds to help make our buildings more seismically safe and more accessible.

We are deeply grateful to San Franciscans for this expressed financial commitment to the Academy. The bond vote acknowledged the Academy's past contributions to the City as a major attraction and as one of the world's leading research and educational institutions. It also conveyed voters' support of our efforts to rebuild the Academy to meet the expectations of 21st century audiences.



Combined with a \$29 million bond approved by voters in 1995 to repair the Steinhart Aquarium, and additional support from a recent statewide parks bond, the Academy now has public funds to begin improvements to our physical plant. This investment will make our facilities seismically safer for the public, our staff, and our priceless scientific collections, and we will make dramatically better use of our existing footprint to fulfill our mission.

It is not often that an institution like ours has the opportunity to break out of the cycle of interim repair and incremental expansion. But we now have that opportunity. The design, function and public presentation of museums, planetariums and aquariums have been revolutionized over the past decade. A thorough reconstruction of the Academy that is innovative in its educational programming, environmentally sound, and architecturally exciting is at hand. We are seizing the opportunity to create a new Academy to better serve our visitors, our members, and our mission.

It is the prospect of new and innovative educational programming, better designed, interactive exhibits, and the sharing of cutting-edge international research on areas critical to our planet—from biodiversity to global warming—which will drive the design elements for the new Academy. Our first step is to concentrate on how a new building would best fulfill our mission to explore and explain the natural world. We have been engaged in extensive efforts during the latter half of this past year to envision our goals and anticipate our future needs.

We need space for our vast research collections, and room for these collections to grow. We need to expand substantially our classrooms and educational facilities to provide school children and citizens with innovative ways to learn the science they need to know. We need to improve the ways we assemble and disseminate complex and ever-changing scientific information.

We began this past year by celebrating the 75th Anniversary of the Steinhart Aquarium. When it first opened the Aquarium was a major attraction, bringing in nearly a quarter of a million visitors in its first month. The *Oakland Tribune* noted at that time, "No benefaction that San Francisco ever enjoyed gained such instant popularity as the Steinhart Aquarium." Based on the work already done, and the highly skilled people deeply involved and completely committed, you have my pledge that we will replicate or exceed that same level of excitement and sense of a 'Must Visit' cultural destination when the new Academy opens its doors. We look forward to your continuing support in helping us transform our vision into the unequalled learning experience that will be the new California Academy of Sciences.

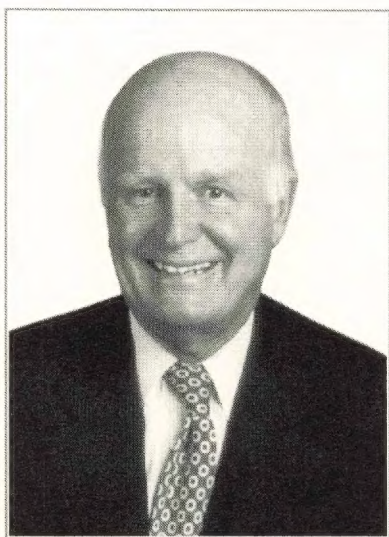
J. Patrick Kociolek, Ph.D.

Executive Director and William R. and Gretchen B. Kimball Chair



## A LETTER FROM THE CHAIRMAN OF THE BOARD OF TRUSTEES

These are exciting times at the California Academy of Sciences. The citizens of San Francisco have voted to rebuild, restore and revitalize this 145-year old institution. This support and additional help from several long-time and generous friends of the Academy have enabled us to define bold, innovative goals for the institution that will meet the scientific and educational challenges of the 21st century. With thoughtful leadership, and an enthusiastic Board of Trustees, we have started an ambitious process to dramatically enhance the importance and relevance of the California Academy of



Sciences, not only to San Francisco but also to its respected stature among the world's most prestigious scientific and cultural institutions.

The need for scientific understanding is becoming more important to our wellbeing as individuals, as a community, as a country and as a planet. With each passing year, biodiversity assumes more and more significance while facing greater and greater threats from exploding human populations and development demands. Thus our Research Division will be greatly broadened and deepened. Concurrently, using innovative and interactive techniques, both our Education program and exhibits will become uniquely responsive links between cutting edge research and the public's understanding of science. All this reflects

our mission "to explore and explain the natural world": celebrating its wonder, discovering its diversity and highlighting the need for protection and conservation.

We are still months away from knowing what the new Academy will look like, but there are criteria that the Trustees are firmly committed to incorporating in our final design. To reflect our involvement with the natural world, the new structure will blend in sensitively with Golden Gate Park. To reflect our concern for the environment, the building will incorporate technologies that minimize the consumption of energy and take full advantage of the Park's natural light, fog and breezes. While retaining the most familiar elements of the Academy's current buildings, we will utilize the latest techniques and ideas to maximize light and flexible uses of our existing footprint. We will certainly ensure that the new Academy is safe and accessible to everyone.

It is now time for us to match and exceed the public funds with the private funds needed to fully accomplish our goals. We have already embarked upon a private fund raising effort. Through the generosity of individuals long supportive of the Academy, by the end of our Fiscal Year (last June 30) we had raised more than \$50 million towards creating state-of-the-art research, education and exhibit facilities with an internationally impeccable reputation. We will soon be launching a campaign to raise the additional funds that will ensure that the new Academy will achieve these objectives and will also offer the most exciting, stimulating and compelling educational programming possible.

Please stay tuned to our plans to rebuild a new Academy that will become a national and international model of how to present science to 21st century audiences. We assure you that we will keep you well informed of our progress as we move forward, and we look forward to your support to help us reinvigorate one of the world's leading science learning facilities.

W. Richard Bingham

Chairman, Board of Trustees



# Highlights

October 16, 2000

## ANNUAL REPORT 1999-2000

On September 16, 1999 California Assemblyman Kevin Shelley and Mayor Willie Brown stood in the long hall of Steinhart Aquarium and proclaimed September 1999 "Steinhart Aquarium Month." The proclamation came in recognition of the



**San Francisco Mayor helps celebrate Steinhart Aquarium's 75th Anniversary.**

Aquarium's 75th Anniversary. Since the facility opened in 1923, 125 million visitors have visited the Steinhart, the oldest major aquarium in America, containing one of the largest and most diverse collections of fishes in the world. The occasion was a celebration of the Academy's past, a past elegantly told in *The History of Steinhart Aquarium:*

*A Very Fishy Tale* by ex-Aquarium Director and now the Academy's Senior Scientist, Dr. John E. McCosker.

Six months later the Academy was celebrating its prospective future. On March 7 2000, the people of San Francisco passed Proposition B,

which will enable the City and County of San Francisco to issue bonds up to \$87.4 million to repair and retrofit the Academy's buildings. These funds, together with the \$29 million bond measure passed in 1995 to restore Steinhart and revenue from a March 2000 state bond allocating funds to California parks and cultural institutions, put the Academy in a position to create a world-class, state-of-the-art museum. It is an opportunity that happens perhaps once in a hundred years.

The passage of Proposition B also precipitated a number of personnel changes within the organization. Foremost among them was the promotion of Dr. Terrence Gosliner from Director of Research to the new position of Academy Provost. Dr. Gosliner's responsibilities include overseeing the Aquarium, Public Programs, and Research Divisions and much of the day-to-day running of the Academy. Meanwhile, Dr. David Kavanaugh, Curator of Entomology, has taken on the role of Director of Research, and Dr. Margaret Burke has been promoted to Chair and Curator of Education.



**Congresswoman Nancy Pelosi launches "Yes on B" campaign to raise \$87.4 million.**



**Children enjoy Earth Day 2000 at the Academy.**

This year saw the start of an ambitious multi-year project, SFBay2K, to survey and inventory the marine creatures that live on the bottom of the bay. We also made a renewed acknowledgment of Earth Day with a weekend long festival including an exhibit, demonstrations, talks, and activities. We plan to celebrate Earth Day every year and reaffirm our commitment to conservation.



## RESEARCH

The California Academy of Sciences is a leading member of the world community of systematic scientists and has been so for nearly 150 years. Over the last decade the Research Division has been widening access to our resources and making them available to students and scientists in the United States and around the world. Recently, through our Center for Biosystematic Research and Information, a broad series of ventures has evolved, each involving other scientific institutions, many of them overseas, and all intent on training the next generation of scientists.

The most ambitious enterprise during the year was the multi-disciplinary, multi-institutional expedition to the Gaoligong

### ACADEMY OVERSEAS

*Academy scientists worked in Australia, Brazil, Burma, Canada, China, Costa Rica, Cuba, Ecuador including the Galapagos Islands, Ethiopia, Gabon, Honduras, Kenya, Malaysia, Madagascar, Mexico, Nepal, Philippines, New Zealand, Spain, and South Africa.*

Shan, a mountain range in China's Yunnan province on the border with Myanmar (Burma). Yunnan, "the Kingdom of Fauna and Flora," is home to more species than any other Chinese province, many of them in the relatively unspoiled southwest where the precipitous slopes and narrow river gorges are not conducive to agriculture or development. The Gaoligong Shan,

which encompasses three nature reserves, exemplifies this region. Encouraged by Professor Li Heng of the Kunming Institute of Botany, the Academy organized two expeditions to this region. The second, and far more ambitious, sponsored by National Geographic Society and donors to the China Natural History Project, took place in summer 2000. Teams and individuals from the Academy's Botany, Entomology, Herpetology, Ichthyology, and Ornithology and Mammalogy departments together with scientists and students from the Kunming Institute of Zoology, Chinese universities and other academic institutions spread out through the northern and southern Nujiang nature reserves. This was the first time an organized collecting trip had traveled to the pristine areas near the Dulong River in the Ayeyarwaddy basin.

The level of collaboration among the Academy and the various Chinese institutions was exceptionally high. Botanical cuttings were shared by up to eight separate bodies in China, the United States, and United Kingdom. Zoological specimens went first to the host institution, while the Academy received duplicates and single specimens where the species was already represented in local collections. In an unprecedented example of trust and cooperation, some of the spiders and carabid beetles came first to San Francisco where we have strong expertise to recognize and categorize the different species. Thousands of specimens were collected and it will take years to fully determine the wealth of the material, but already we know it includes hundreds of new species. Specimens found to be unique will be returned to the appropriate Chinese institution.

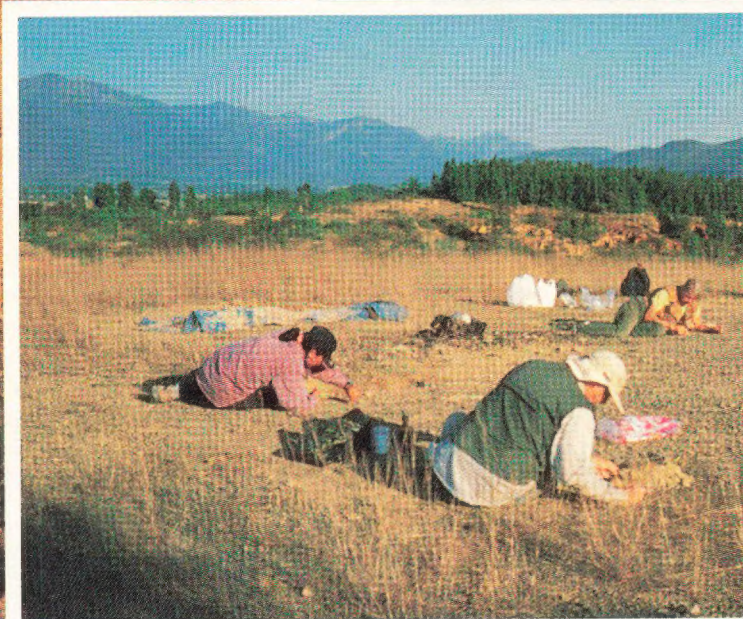
The Academy's association with Madagascar continues. We signed an accord with Parc Botanique et Zoologique de Tsimbazaza



**DR. TERRENCE M. GOSLINER**  
**Provost**

*A glimpse of a living jewel during a visit to a California tidepool was all it took to send high schooler Terrence M. Gosliner into a life of science. Curiosity about the nudibranch, or sea slug, propelled Gosliner into Academy zoologist Dusty Chiver's lab, where he published his first scientific paper at age 17. Gosliner went on to earn a doctorate from the University of New Hampshire and returned to the Academy as assistant curator in 1982. His research has uncovered more than 800 new nudibranch species, which drug companies hope to investigate as a new source of medicines. "We keep finding them faster than we can work on them," Gosliner says. In the newly created position of Provost, he coordinates the education, aquarium, exhibits and research programs while striving to make the work of the Academy more accessible to nonscientists. To add a sense of immediacy to the museum's main floor, Gosliner launched ScienceNOW—a rotating exhibit showcasing timely science news, work by Academy scientists, and live animals.*

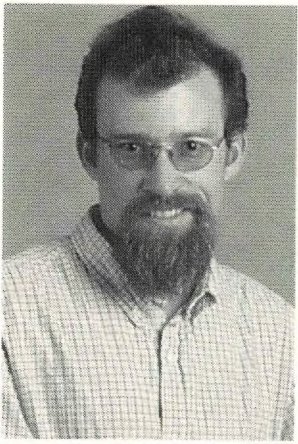




Clockwise from the top:  
Dr. Bruce Bartholomew and  
Professor Li Heng of the  
Kunming Institute of Botany in  
Yunnan, China; Dr. Joe Slowinski  
in Burma; Dr. Nina Jablonski  
and her field team in Nepal; a fossil  
molar unearthed in Nepal; Shield  
beetle and orchid from Yunnan.



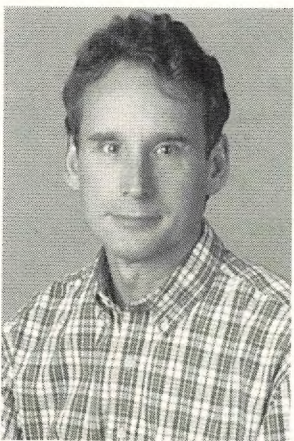
## RESEARCH



### BRIAN FISHER

*Unless he were to sprout antennae, it's hard to imagine how Brian Fisher could get any closer to his beloved ants. Industrious and kinetic, Fisher beams when he talks about his research cataloguing the enormous diversity of ant species. "To me, a driving thrill is the discoveries I can make about the world," he says. His*

*fascination has led him from the lush forests of Gabon and Central America to the island isolation of Madagascar, where he has discovered more than 600 new ant species. There, he uses the variety of ant life to gauge overall biodiversity and to help the government determine where to focus conservation efforts. "Ants show detailed information about species richness patterns," he explains. Before becoming the Academy's assistant curator of entomology, Fisher, who received his doctorate from the University of California at Davis, worked at Cape Town's South African Museum and Chicago's Field Museum of Natural History.*



### KIM STEINER

*Like the bees he has come to study, Kim Steiner's life has become inextricably linked to rare and exotic flowers. After finishing his doctorate in botany at the University of California at Davis, Steiner put down roots at the National Botanical Institute in Cape Town, where he began to study flowers that entice pol-*

*linators with an unusual offering: oil to nourish larvae. While most flowers sport just one sock-like spur filled with pollen and nectar, about 50 South African species boast two, an efficient design for various species of bees that fuel up with the oil by dipping their two forelegs into the spurs as if putting on a hospital gown. "What has interested me is not so much the numbers but the coevolution of bees and flowers," says Steiner, whose studies suggest the symbiotic relationship evolved independently several times throughout the world. Steiner recently assumed the Academy's Lindsay Chair in Botany. Coming from a setting focused on botanical research, he looks forward to the chance to cross-pollinate ideas with Academy scientists in other fields.*

to support the preparation of specimens and to facilitate the permit process. The first exchange students have already begun research at the Academy. And, also in collaboration with Tsimbazaza Zoo, we have commenced a major investigation of terrestrial arthropods, in western and southern Madagascar. Schlinger Curator Dr. Charles Griswold and our new Assistant Curator Dr. Brian L. Fisher are heading this research with support from a National Science Foundation Biotic Surveys and Inventories grant. Meanwhile Dr. Joseph Slowinski returned to Myanmar three times during the year to study the herpetofauna in conjunction with Burmese scientists. His work was featured prominently on a National Geographic Society program and in the *San Francisco Examiner*.

Two other Academy curators received notice in the world press. Dr. Nina Jablonski, in collaboration with her husband, George Chaplin, published a paper on the surprisingly rapid evolution of skin color as early human populations migrated to places with varying intensities of ultra-violet radiation. The research was picked up in popular magazines in many countries, from Germany to Australia. Even greater international acclaim was accorded Dr. Luis Baptista who addressed the annual meeting of the American Association for the Advancement of Science on the correlation between birdsong and classical music. Tragically, Dr. Baptista died unexpectedly a few months later.

Memoranda of Understanding have been signed between the Academy and the Charles Darwin Research Station (CDRS) in Galápagos, Institute for Bioactive Natural Products (INBIO) in Costa Rica, and Tribhuvan University in Kathmandu. They will promote closer ties including joint research and exchange of scientists and students including, in the case of CDRS, students of exhibit design.

In our own backyard we laid the groundwork for a major, exciting undertaking. Last January saw the launching of the Academy's San Francisco Bay 2000 Project (SFBay2K) which will inventory the Bay's benthic fauna, the creatures that live on the seabed. This project, with strong foundation support, will give scientists a baseline against which we can document future changes,



notably those that might be caused by the presence of new and existing alien species, and by long-term changes in the water temperature, salinity, or other factors. Assistant Curator Dr. Richard Mooi serves as Scientific Coordinator of a wide consortium of organizations and agencies, including National Oceanic and Atmospheric Agency, United States Geological Survey, San Francisco State University, Williams College, San Francisco Estuary Institute, the local public utilities commission and others. San Francisco Unified School District teachers and students are also expected to play a major part in sampling and analysis.

Our systematics research will be assisted enormously by the acquisition, courtesy of National Science Foundation and the McBean Family Foundation, of the latest model of scanning-electron microscope (SEM). The new digitally scanned images are very sharp and clean and can be readily transmitted across the internet.

In May 2000, 24,500 more winter-run chinook salmon were transferred to the Steinhart Aquarium from Bodega Marine Laboratory (BML) to be held and raised here until sexual maturity. After two to three years, mature males and females will be transferred back to BML for spawning; their fry will be released into the Sacramento River. We continue to maintain populations of a number of other endangered species, including two very rare pupfish: the desert pupfish (*Cyprinodon macularius*) and charco la palma pupfish (*Cyprinodon longidorsalis*).



Late renowned ornithologist, Dr. Luis Baptista, was Chair and Curator of Ornithology and Mammalogy, and an inspirational teacher and a resourceful researcher.



GROWTH AND USE OF COLLECTIONS IN RESEARCH DEPARTMENTS IN 1998-99			
DEPARTMENT	SPECIMENS ACCESSIONED	SPECIMENS LOANED	VISITORS
Anthropology	169	169	12
Aquatic Biology	n/a	n/a	n/a
Botany	19,000	2,453	568
Entomology	200,394	36,431	2,003
Herpetology	3,353	1,537	311
Ichthyology	1,812	2,636	590
Invertebrate Zoology			
& Geology	4,297	1,749	43
Ornithology & Mammalogy	1,610	168	645
Totals	230,635	45,143	4,143
Total holdings in all collections: 16,524,487			



THE PUBLIC INTERFACE

The “Venoms” exhibit is a tour de force. The first major exhibition in ten years to be designed and built in-house, “Venoms: Striking Beauties” is an impressive achievement. It also represents the new emphasis on internal collaboration, as the exhibit was created with a cross-discipline team. To sustain the living exhibits, life-support systems were built to carry saltwater into Wattis Hall. Aquariums were created for many species, never previously housed at the Steinhart Aquarium—spiders, new snakes, the infamous blue-ringed octopus, and jellyfish in a special circular tank whose constant gentle current keeps these medusae in motion.

Of course, by the nature of the exhibit, all these animals are dangerous and all needed extra special handling, so the animals were brought in six months before the exhibit opened so the staff, under the leadership of Aquatic Biologist Ken Howell, could determine the appropriate husbandry. Tanks had to be sensitively designed so that the animals could find shelter in the hiding places they naturally seek and, at the same time, be visible to visitors. This learning experience will prove invaluable as we prepare for the rebuilt Academy in which live animals will play an integral part throughout the public floor.

The exhibit includes many innovative and imaginative hands-on modules, such as comparing visitors’ reaction times to a snake’s, discovering which color patterns have evolved to warn of danger. The overall space incorporates a site for talks and demonstrations such as feeding behavior of venomous snakes, insects, spiders, fish, and other deadly marine creatures, and what to do if exposed to lethal toxins.

Earlier in the year, two major traveling exhibits came to the Academy. During the summer we showed, “Missing Links Alive!,” a comprehensive exhibit of the mysteries of human origins. The exhibition had two distinct components, with one part designed

an adjacent hall displayed Paleolithic artifacts that originated in Europe 22-28,000 years ago, and that represent some of the earliest known examples of human culture. They were on loan from the Moravian Museum in Brno in the Czech Republic, and included the renowned Dolni Vestonice Venus. To the traveling exhibit we contributed a display demonstrating Anthropology Curator, Dr. Nina Jablonski’s theory on the origins of bipedalism, perhaps the most critical component in the evolution of humans.

This exhibit was followed by “Africa: One Continent...Many Worlds,” with significant support from the Ford Foundation and *Time* Magazine and considerable assistance from the Academy’s Africa Exhibit Advisory Committee, a group representing the local African-American community. The exhibit exemplified the richness and diverse culture of Africa from both historical and modern perspectives. The scenes with the greatest emotional impact on visitors were those showing the slave ships and slave auctions. As part of the Academy’s goal for inclusion and collaboration, the Africa theme was picked up throughout the museum. In the aquarium, African fish were highlighted, African Hall was enhanced with restored displays of the rhinoceros and hippopotamus, and part of the Academy’s extensive African artifact collection was displayed in Wattis Gallery, where a new display also featured the achievements of prominent Bay Area African-Americans.

The well-established and ever-popular “Traditional Arts of the World” demonstrations, held at 1:00 p.m. on Saturdays throughout the year, have been enhanced by more live shows and informal lectures coordinated with exhibits. Accompanying the Africa Exhibit were programs such as “Tales of the Ashanti,” “African Masks,” Congolese and West African musicians, Cameroon Cooking, and talks on various African animals such as frogs, cats, and penguins. There were also lectures by Academy Fellows who are experts on different groups of venomous creatures. We are particularly proud of a new series of Public Program talks which, in conjunction with Traditional Arts series, highlight the Academy’s celebration of Black History Month, Chinese New

1999-2000 AT A GLANCE
Total number of visitors: 833,533
Number of school children attending the Museum free: 76,492
Free Day attendance: 104,434

for younger audiences. Animatronic dioramas presented views of our ancestors and near relatives, while





Left and below: The exhibit opening of "Africa One Continent...Many Worlds"; Below center: Wu-Shao-Tung whose photographs were displayed in the exhibit "One Thousand Cranes" (bottom), with guest Anne Xu; Center: Diaroma showing early humans in the exhibit "Missing Links;" Far left: Tango dancers perform during Latino Heritage Month.





# THE PUBLIC INTERFACE

Year, and, for the first time, Latino Heritage Month.

The Academy’s commitment to conservation was publicly evidenced with our emphasis on Earth Day. Our first extensive celebration since the first Earth Day thirty years ago was geared primarily to children. For two days the central courtyard and front steps were alive with celebrants, educational displays, and activities arranged by environmental organizations.

Other exhibits included “A Thousand Cranes” which was designed and built at the Academy around the marvelous photographs of Wu Shao-Tung. The labels were written in both Chinese and English, and the 1,000 origami cranes, which decorated the exhibit hall, were the work of volunteers and San Francisco schoolchildren.

At any one time, we can only display a portion of the extensive “Elkus Collection,” so every six months, the displays are partially rotated, and different treasures are brought out to replace artifacts sensitive to light—paintings, textiles, and baskets.

The Morrison Planetarium introduced four new sky shows:

### PLANETARIUM 1999-2000 AT A GLANCE

- Number of visitors: 151,274
- Number of students at school shows: 50,744
- Number of Laserium shows: 119
- with total audience of: 6,160
- Audience for Dean Lecture Series: 2,719

“Mysteries of the Millennium” showing how our knowledge of the universe has evolved; “Into the Depth of the Night”



### AQUARIUM 1999-2000 AT A GLANCE

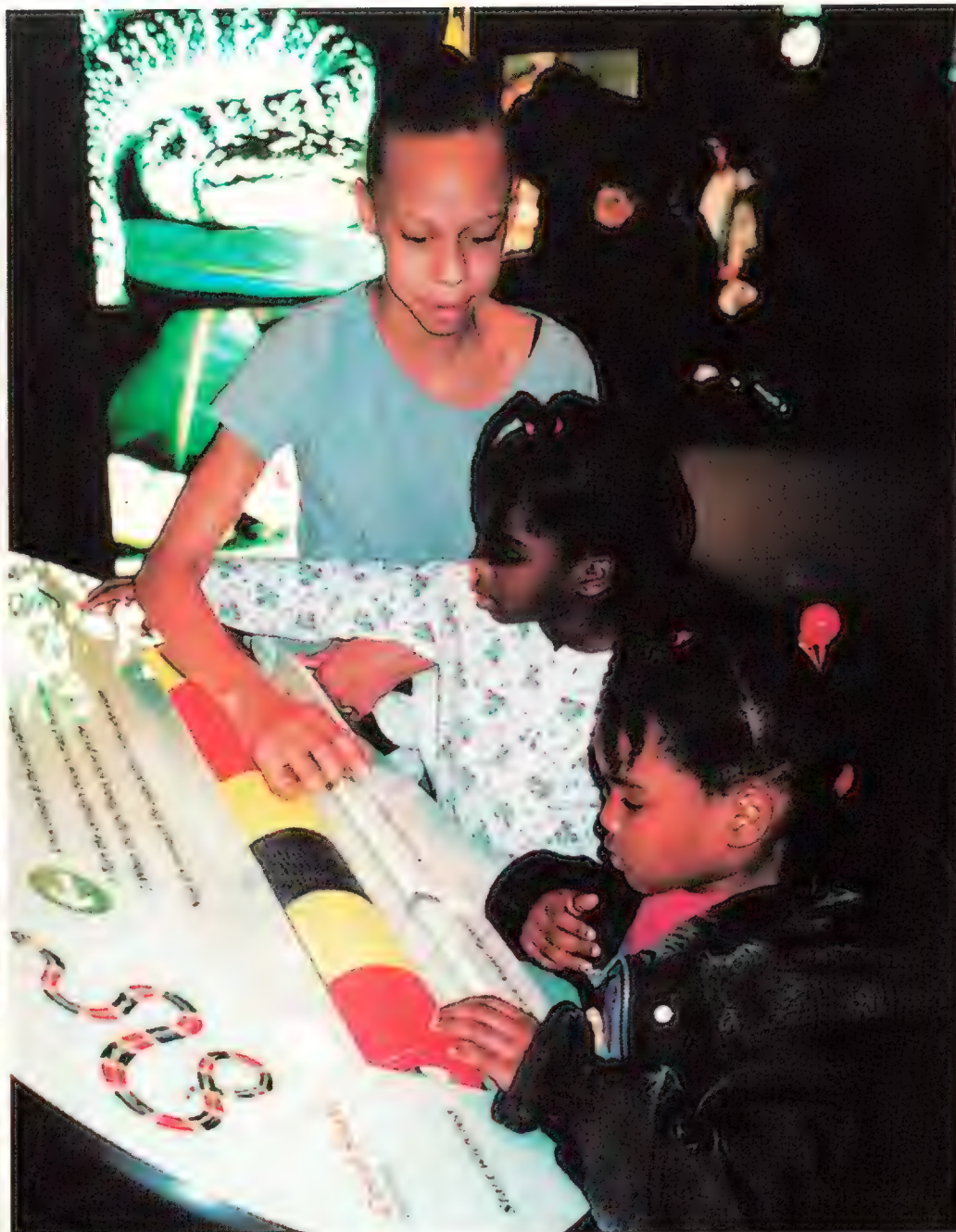
- Size of collections: 11,610 total specimens, representing 818 species.
- Number of research/breeding projects underway: 39
- Number of student visitor/visiting scientists: 549
- Volunteers supporting the work of the department: 233, contributing 7194 hours.
- Seminars, lectures and presentations made: 11



exploring deep space; “Solar System 2.0”; and “Almanac 2000,” plus an updated “Christmas Star.” All were written and produced by Bing Quock. Over 50,000 school kids attended these shows—the highest number in 40 years. Taking advantage of the sound quality within the planetarium and the opportunities it offers for visual enhancement, two live concerts were performed under the dome.

In the aquarium, the rebuilt Living Coral tank, now in its fifth year, is fully matured and healthy. A new calcium reactor, which dissolves old coral and reintroduces ions back in the tank in the right ratio, has enabled us, for the first time, to grow *Acropora*, the primary reef-building stony coral. The black-footed penguin exhibit was completely refitted and includes a quarantine area on the roof. And Herb, the Academy’s 65-year-old lungfish, is a year older.





This page: Scenes from Members' Open House.  
Bottom left: Astronomer Kirsten Vanstone  
at Earth Day 2000.

Opposite page: Staff and visitors celebrate  
Steinhart Aquarium's 75th Birthday.





EDUCATION AND OUTREACH



Education Department.  
Clockwise from top left:  
Lorrie Topinka with teacher  
Kathryn Singh; Jack Laws  
and volunteers at  
Mountain Lake in San  
Francisco's Presidio;  
Interns at the Academy's  
Pepperwood Preserve in  
Sonoma County. Students  
in the Wild City! program  
enjoy a summer outing.



Over the last three years, the Education Department has performed a major reorganization, and the results are now being enjoyed by science educators and their students throughout the Bay area.

For example, Spring 2000 saw the launch of a new outreach program, Wild City!, that targets fourth and fifth graders in underserved areas of San Francisco. This hands-on program focuses on teaching real science in the urban environment and, in particular, the biodiversity of the local area. Two Academy staff members, accompanied by docents, make three visits to each participating class, and on one occasion scheduled early in the course, the children come to the Academy. They go behind the scenes of a research department, interact with scientists at work, and learn about some of the distinctions between species. They also form a work-party to help remove invasive species from Golden Gate Park. Although the concept of biodiversity and its importance can be difficult for ten-year olds to grasp, they quickly see the benefits of removing ivy that is inhibiting the growth of native oak woodlands. And they take that insight back to the classroom. The program, subsidized by grants, including funding from the Gold Foundation and Langendorf Foundation, has been an immediate success.

During the summer, Wild City! extends its outdoor activities. It takes kids from community organizations such as the Whitney-Young Child Development Center in Hunter's Point, introduces them to natural areas around the city, and gets them participating in a restoration project.

Summer vacation is also the time for our hugely successful week-long Camp Academy programs which, each year, give over 200 children a concentrated exposure to the natural sciences, with special emphasis on the environment. These kids are divided into three age groups: Junior Explorers, ages 6-8; Golden Gate Park campers, ages 9-11, who occasionally venture further afield; and overnight courses for children ages 11-14, who spend much of their week either in the Sierra, at Bodega Bay, or at the Academy's Coastal Range property, Pepperwood Ranch, near Santa Rosa. Although

Camp Academy is primarily fee-based we also offer scholarships to many of the participants.

The well-publicized Mountain Lake Project for middle and high school students and undergraduates is now in full swing. In the early 40s, Mountain Lake in San Francisco's Presidio was a dumping site for the construction of the adjacent McArthur Tunnel. Today, it is an active ecological research site. This is in large part thanks to the Academy, which oversees the students who monitor water quality and species of birds, reptiles, amphibians and plankton, laying the groundwork for future restoration efforts. The more unusual specimens are forwarded to Academy scientists for analysis. A species of worm (*Rhynchelmis rostrata*) was rediscovered here in an adjacent stream. The species is rather delicate, and may be a good indicator of habitat quality. As the original specimen was lost in the 1906 fire, this was an especially rewarding discovery.

The Academy offers organized programs to children of all



**DR. MARGARET GOULD BURKE**  
*Chair and Curator of the Education  
Department*

*Dr. Margaret Gould Burke didn't get into the business of education via the usual routes. She is a research biologist by training, and holds a doctorate in zoology from Duke University. After tailing feral goats on the remote Indian Ocean atoll of Aldabra for her doctoral dissertation, she taught biology first at the University of North Dakota and then the University of Mary in Bismarck, where she helped found a hands-on science center in a local mall. "It was a terrific way to reach kids," Burke said. The experiment inspired a career change. Burke joined the Academy's Education Department in 1998, assuming the chair in January 2000. "It was an opportunity to have the best of both worlds—to be at a research institution and be involved in a major way in informal science education," Burke said. Brimming with ideas for the future, Burke plans to use multilingual exhibits and family-oriented programs to initiate ever more visitors into the mysteries of science.*



EDUCATION AND OUTREACH

ages, but we especially want to encourage and enrich their interest in science when they reach their mid-teens. Careers in Science, under its manager Kellyx Nelson, offers two programs. Each year, the Intern Program hires ten to twelve students who join 25 students from previous years. Interns are between the ages of 15 and 20 and are enrolled in accredited learning institutions, primarily San Francisco high schools. They generally belong to communities underrepresented in the sciences. The interns are trained to teach science to museum visitors and back in their own schools. They also assist our scientific researchers. The reactions from the interns are most rewarding-both for us and, more importantly, for them. “I never would’ve imagined that I would be explaining science to an adult or a crowd of people,” said intern Karina Rink.

When the interns go on to local colleges, many of them join our Research Explainers program. There is no better way to learn, and to articulate new knowledge, than to teach it. This year five undergraduates made the yearlong commitment, spending half their time at the Academy studying in the Research Division. They learn from mentors who are usually graduate students. Then, changing from students to teachers, they pass on their knowledge to interns. One research explainer this year, Alondra Blandon, authored an article describing a new species of fish. Together with the interns, and often their graduate mentors, they also develop and staff demonstrations for the public floor.

We have a number of other programs that bring biology undergraduates here from universities around the country. These include the National Science Foundation supported Summer Systematics Institute, the Robert T. Wallace Undergraduate Research Endowment in systematics, and the A. Crawford Cooley Undergraduate Internship. The Academy Fellows jointly sponsor an innovative internship in biological illustration.

At the graduate level, the Academy has training programs in conjunction with local universities including masters students from San Francisco State University and doctoral students from University of California at Santa Cruz, as well as a science writing

intern working for *California Wild*. The Lakeside Foundation supports students coming from further afield, including Brazil, China, Costa Rica, Haiti, Madagascar, Mexico, and Peru.

The Education Department also has a full spectrum of programs for adults. Three times each year science teachers from middle and high schools and community colleges gather for BioForum, all-day sessions focused on a single subject. This year we held programs on Innovative Research and Field Biology, Madagascar’s Amazing Fauna, and Museum Collections and Conservation, with speakers from all over the United States. And now, with our revitalized Teachers’ Workshops, we are able to interact with teachers throughout the academic year. Many of these natural science workshops focus on the exhibits on the museum floor. This year the emphasis was on “Venoms” and “A Thousand Cranes.”

The biodiversity theme that is being stressed throughout the museum’s activities was also the central premise of the new docent training course, “Diversity of Life.” Instead of focusing on a single hall as in the past, the course considered a single concept: diversity. It is a concept that is integral to all the natural science exhibits and, once trained, docents cover a wide range of subjects and give varied and personalized tours. Rather than describing the exhibits themselves, the displays become a tool to impart broader and deeper knowledge of the natural sciences.

The Education Department also runs programs for our 25,000 members and their families and friends. This past year, the Youth and Adult courses enrolled over 2,700 people, including nearly 650 children in the Junior Academy and Camp Academy programs. Opportunities ranged from kayaking in Elkhorn Slough or Mono

EDUCATION PROGRAM ATTENDANCE:	12,180	Basin to whale
Bioforum/teacher workshops	389	watching in Monterey
Junior Academy (school year)	500	as well as hunting for
Camp Academy (summer)	235	“herps” at Bootjack
Adult and Family courses	1,492	Campon Mt.
Outreach (school year)	390	Tamalpais; from
Lectures	6,774	
Kindergarten Night	2,400	gazing at the stars at



Hume Observatory in Pepperwood Preserve to learning about mastodons. We serve everyone from toddlers to seniors in an amazing variety of venues.

The general public is welcomed to the many lectures held at both the Academy and the Herbst Theater in the Civic Center. Among those participating in the Conversations at the Herbst were Pulitzer Prize winner Dr. Jared Diamond, renowned wildlife biologist Dr. George Schaller, and famed raconteur Paul Theroux. At the Academy, Carol Beckwith and Angela Fisher talked about their 25 years of working together documenting "African Ceremonies" to a sell-out crowd. In a joint venture with the Commonwealth Club, Dava Sobel spoke about her new book *Galileo's Daughter*.

During the spring, the Benjamin Dean Lecture Series presented by the Morrison Planetarium focused on ideas at the forefront of astronomical research. They included a presentation by the controversial but highly respected Dr. Halton Arp of the Max-Planck-Institute for Astrophysics who proposes that, rather than the Big Bang origin of the Universe, matter may be continually created.

We have three other important components to our outreach program, two well established and the other relatively new. Each year, Science in Action/Earth News broadcasts some 80 radio interviews with Academy scientists on KQED and CBS stations around the country. *California Wild: Natural Sciences for Thinking Animals*, the Academy's quarterly publication, through its well-crafted articles and explanatory images extends our mission beyond the membership to subscribers and other readers throughout the world.

And this year saw a true blossoming of the Academy's web site. Information at [www.calacademy.org](http://www.calacademy.org) is now better organized, more current, and more attractive. The site includes some 2,500 pages plus thousands of links. The Academy Library is particularly active in establishing on-line bibliographies in association with our research, exhibits, and our many other activities.

**During the summer, the Wild City! program introduces kids to natural areas around San Francisco.**





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Each and every one is worthy of our commendation and appreciation.

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Dave Brian Butvill	Jennifer Chung
Kristen Cabot	Philip Chung
Carroll Cahill	Stephen Cicornio
Eileen Callaghan	Kathleen Clahan
Christine Calloway-Holt	Emilie Clark
Jon Campo	Robert Cohen
Aubrey Cano	Ellen Colasurdo
Rex Carey	Gregory Cole
Betty Carman	Dick Coleman
Rigoberto Caro, IV	Ben Colloff
Rigoberto Caro, Jr.	Frank Commanday
Ellen Carr	Douglas Condrotte
Elizabeth Carroll	Rebecca Conner
Carneau Carrouche	Marilyn Conrad
Rebecca Carson	Martha Conway
Louise Cartier	Tim Conway
George Carvalho, Sr.	Dan Cook
Lorraine Casazza	Joan Cooper
Christian Cebrian	Nancy Coopersmith
Mary Cecilio	Fauno L. Cordes
Adelheid Certik	Patricia Cornell
Fred Chambers	Lysbeth Corsi
Tom Chambers	Gina Corteza
Colin Chan	Jason Costello
David Chan	Ann Costigan



Robin Courtney	Jennifer Dougherty	Jean Faulkner
Ellen Cowley	Leslie Doughty	John Featherstone
Ronald Cramer	Jerry Dow	Seymour Feldman
William Crawford	Mervyn Dowd, Jr.	Patti Ferrera
Amy Crichton	Robert Doxey	James Fidian
Lydia Cuiting	Mary Ellen Doyle	Barbara Fields
Alex Culley	Charles Drechsler	Arville Finacom
Irene Culver	Dolores Drew	Barbara Firger
Kenneth Culver	John Drew	Donna Fisher
Betty Cunningham	Laura Ducoff	Tara Fitz-Gerald
Carolyn Cunningham	Isam Dudum	Michael Flanders
Daniel Curoe	Philip Duffy	Socorro Flanders
Lise Currie	Shawn Duffy	Lindsay Fleming
Patricia Dal Porto	Colleen Duggan	Jacqueline Fletcher
Susannah Dameron	Laura Dunleavy	Joan Florence
Ronald Dammann	Lynn Dunne	John Flores
Elaine Daniels	Jennifer Dursi	David Foley
Emily Date	Ragini Dutt	Kevin Foley
Nicole David	Christopher Dutton	Timothy Folsom
Cheronda Davis	James Duxbury	Marilyn Forni
Julian Davis	Caitlin Dyckman	Jeremy Foster
Martin Davis	Nancy Dykes	Penelope Foster
Dennis Davison	Donald Eager	Steve Foster
Tom Day	Ginger Easley	Susan Fox
Ron De Leon, Jr	Vivian Easter	Jules Fraden
Brian Dea	Elisabeth Eckardt	Jeremy Frank
Jerry Dear	Albert Edgerton	Kate Frankel
Ronald Decloux	Barbara A. Edwards	Joann Franklin Knox
Tina Decloux	Abeer Elafifi	Jack Fraser
James DeGrogorio	Joel Eledge	Maribel Fraser
Sally DeHart	Ashley Elinor	Frank Fredericks
Robin DeLugan	Carl Elliger	Neti Fredericks
Terri DeMartini	Doniel Ellis	Guy Freeman
Alphonse Demee, Jr.	Kimiko En	Gail Freihofer
Francis DeMouthe	Helene Enderlin	Frank Freitas
Jean A. DeMouthe	Jackie Eng	Barbara Carlisle French
Micah Der	Raymond Engeszer	Brian French
Zina Deretsky	Robert Entwistle	Mary Ann Froley
April Devitt	Aftab Enty	Daniel Froloff
Bep DeVries	Richard Epstein	Alberta Fross
Karma DeWitt	Erin Erb	Enrica Fung
Jill Dickerson	Oscar Erickson	Karin Ka Yiu Fung
Mary Margaret Dickinson	Maria Esclamado	Marni Fyelling
Brook Dillon	Sandra Etchell	Yvonne Gabbay
Jessical Dillon	Helene Ettelson	Gillian Gaghan
Jim Dimitratos	Carol Evans	Dartian Gaian
Amy Diorio	Charles Evans	Jane Galvan
Edward Dishart	James Evans	Dolores Gamez
Inge Dobel	Joseph Evans	David Gan
Sandi Dobrowolsky	Ted Evans	Evelyn Gara
Helen Doherty	Shireen Fahey	Paul Gardinier
Steve Doherty	Neil Fahy	Jocelyn Garovoy
Theresa Doherty	Shawn Farrell	Michael Gast





**Opposite page, from left: Marianne Quarre Dean, chair of the Halloween Party Host Committee and her son, Mac; Volunteers on a tule elk outing.**

**This page, from left: Bill Urbani on a Pt. Reyes excursion; Docent photographer Kate Frankel; Dedicated volunteers Ann Costigan and Helen Heller.**



Sally Gati	Lilian Hanahan
Arthur Gauss	Jacklyn Harang
Douglas Gay	Bill Harrington
Diana Gay-Catania	Trevor Harrison
Mavis Gee	Ed Hartsook
Jon Geigenmuller	Francell Haskins
William Giesin	Shelley Hatleberg
Melissa Gill	Barbara (B.J.) Hauge
Frankie Gillette	Peter Haugen
Maxwell Gillette	Ingrid Havneraas
Susan Gillis	Erik Hawk
Herschel Gist	Donald Heckman
Nigel Gladhart	Eliza Heery
Terrance Go	Sara Hefty
Antonio Godoy	Tracy Held
Gabrielle Goffinet	Helen Heller
Noah Goldstein	Virginia Helleskov
David Gomborg	Lilo Hendrix
Jose Luis Gomez	John Henson
Joanne Goodman	Yaye Herman
Marj Goodner	Jocelynn Herrick-Stone
Steve Gough	Chris Hess
Svetlana Goultiowa	Paulo Rodriguez Heyman
Phyllis Graff	Lanier Hines
Kenneth Graham	Eric Hing
Pat Graham	Albert Ho
Lawrence (Larry) Graubart	Stanley Ho
Karen Greig	Mercy Ho-Charles
John Greiner	Stanley Ho
Garen Grigoryan	Tinyee Hoang
Amanda Grimes	Robert Hoellwarth
Francesca Guerro	Mary Louise Hogikyan
Dexter Guess	Katie Holmes
Jeff Haas	Paul Holtzman
Marie Hagelstein	Florence Holub
Barnaby Hall	Margery Hom-Brown
Betty Hall	Jim Honniball
Jamie Hall	Steve Hossfeld
Bob Halsey	Sandra Hou
Sue Jean Halvorsen	Catherine Hounshell
Alexandra Hamilton	Judy Hsu
Douglas Hamilton	Teming Hsueh
Matthew Hamilton	Cindy Hu
Ben Hammett	Linda Huang

Rynda Hudman  
Andrew Huey  
Elena Huey  
Frank Hui  
Fiona Humphrey  
Walter Hurst  
Ann Hutchison  
Lee Jackrel  
Cynthia Jackson  
Rebecca Jacofsky  
Ian James  
Emily Jan  
Faith Jansen  
Rhonda Jenkins  
Barbara Jennings  
John Jennings  
Lowell Jennings  
Nicholas Jessen  
Dave Jirsa  
Art Johnson  
Jean Johnson  
Michael Johnson  
Rachel Johnson  
Andrew Jones  
Anni Jones  
Bertha Jones  
Anita Joy  
Stanley Judd  
Tyson Jue  
Seymour Jurow  
Clennis Justice  
Barbara Kalfain  
Ruth Kamena  
Fumiko Kanekawa  
Ulrich Karrer  
Christine Kasman  
Irving Katuna  
Githa Katzeff  
William Kauffman  
Mamiko Kawaguchi  
Rick Kawin  
William Kaye  
Delainya Kazarian  
Carol Keiper  
Richard Kendall  
Rosina Kendal  
Kathleen Kennedy  
Greg Kensett  
Eugene Kesselman  
Doris Ketcham  
Pierre Khoury  
Virginia Kibre  
Mikhail Kirilylik  
Ginny Kirsch  
Judy Kjellberg  
Nicole Kleinsinger

Juliet Knowles  
Carla Kociolek  
Garrelt Koenig  
James Kohnke  
Ashish Kolli  
Richard Krause  
Anne Kresko  
Adam Krop  
Martha Kropf  
Linda Kuhl  
Danika Kuziomko  
Carole Ladure  
Rebecca Lafore  
David Laity  
David Laity, Jr.  
Mary Jane Laity  
Aimee Lam  
Freda Lam  
Jim Lammers  
Christine Landrum  
Sharon Landwehr  
Elizabeth Lane  
Kathy Lane-Pratt  
Robert Langston  
Albert Larcina  
Benjamin Lau  
Michel Lau  
On Lee Lau  
Raymond Laval  
Eleanor Lawry  
Betsy Lawson  
Richard Lazarus  
Anita Lee  
C. Bruce Lee  
Chris Lee  
Jenin Lee  
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Sally Legge  
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Lisa Lenkarski  
Olive Leonor  
Elizabeth Lesch  
Ricky Leung  
Nancy Levine  
Steven Lew  
Harrison  
Veronica Li  
Nancy Liebenguth  
Ellen Lieber  
Sandra Leistner  
John Likas  
Kathleen Lilienthal  
Harry Lin  
Ya-Hui Lin

Sandy Linder  
Lois Lippincott  
Jennifer Liscomb  
Carole Litwin  
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Helen Liu  
Jessica Liu  
Patty Liu  
Miriam Locke  
Heather Logan  
Mae Loh  
Diana Loomis  
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James Lovette  
Candace Low  
Cristina Loyola  
Caroline Luce  
Lawrence Lucks  
Kiamara Ludwig  
Vivian Lui  
Elizabeth Lujan  
Marleen Luke  
Suryani Lukimin  
Judy Lum  
Will Lundy  
Jimmy Ly  
Anne Lynch  
Matthew Lynch  
Preston Lytton  
Fontane Ma  
Kimberly Macadaeg  
Kim MacDonald  
Douglass MacMillan  
Tilly Maddux  
Ekhard Mahl  
Brent Malarkey  
Michael Maletich  
Rose Mallamo  
Justin Mallen  
Tala Maloa  
Regina Manalang  
Noreen Mangabay  
Maria Mangold  
Robert Mann  
Patrick Marantal  
Andy Martin  
David Martin  
Kay Martin  
Lou Ann Martin  
Steve Martin  
Anna Martinez

Ted Martinez  
Irma Marx  
Martha Masterson  
Vivian Matuk  
S. Denise May  
Anne McCamman  
Brian McCarthy  
Elizabeth McCarthy-Flores  
Jean McCauley  
Karin McClune  
Willie McCoy  
Judy McCubbin  
Amelia McDonald  
Bruce McDonald  
Joel McFaden  
Mikki McGee  
Monica McGee  
Maureen McGowan  
Marcia McLain  
Paul McLaughlin  
Raleigh McLemore  
Pamela McNay  
Markus Meier  
Maureen Meikle  
Marko Melendy  
Ramon Menoza  
Marck Menke  
Bill Merkel  
Joy Mesick  
Marna Mesina  
Glinda Messina  
Shubha Metre  
George Metz  
Louise Meyer  
Richard Meyerhoff  
Melissa Michaud  
Robert Miche  
Paula Miller  
Ralph Miller, III  
R. F. Milne  
Bill Mitchell  
Patricia Mitchell  
Jed Miyashiro  
Ryan Miziker  
Mara Monroe  
Dolores Monye  
Margaret Moody  
Gerald Moore  
Katherine Moore  
Khishna Moore  
Mary Edith Moore  
Peter Moore  
Virginia Moore  
Heather Dawn Moreland

Leslie Moribe  
Austin Morrill  
Bert Morris  
ZeeZee Mott  
Allyson Moulton  
Karen Munday  
William Munich  
Heather Murdock  
Carole Murfee  
Robert Murfee  
Carol Murphy  
Joseph Murphy  
Karen Murphy  
I. Lee Murphy-Reed  
Roger Murray  
Peter Myers  
Valerie Myint  
Jo Son Myung  
Michael Nakanishi  
Jennifer Nash  
Ruth Nash  
Joelene Nation  
Gloria Naval  
Gary Neargarder  
Deborah Nebenzahl  
Dora Nelson  
Kellyx Nelson  
Charles Nemenzo  
Jeff Newell  
Denise Newman  
Hudelle Newman  
Annie Ng  
Joseph Ng  
Vicki Ng  
Andreas Nguyen  
Donald Nguyen  
Tong-Ba Nguyen  
Carland Nicholson  
Sheva Nickravesh  
Therese Nikas  
Carmela Nilan  
John Niles  
Molly Nilsson  
David Nonomura  
Burt Norall  
Marion Norberg  
John Northwood  
Cindy Novak  
Sean Nunan  
Sunthron Nuntadusit  
Michael Nutile  
Patricia O'Brien  
Lindsay O'Hara  
Patty O'Hara  
Damon O'Keefe  
Walter Obermeyer  
Juan Ochoa  
Miki Ohara  
Ken Okutake  
Kari Olila



## VOLUNTEERS / DOCENTS

**From left: California Wild volunteer Buff Corsi and library volunteer Ann Preece; Volunteers Talia Salkar and Tara Murphy; Al Shell documenting docent training course.**



Helen Olsen	Jenny Pramuk
Benjamin Olshin	Kate Prator
Margaret Orr	Ann Preece
Georgina Ortiz	Ellen Price
Dorothy Oster	Dolores Priem
Christine Oswald	Elizabeth Proctor
Ed Ow	Judy Prokupek
Benjamin Owen	Robin Prothro
Diane Owens	Serena Puga
Ingrid Oyen	Steven Pullman
Alan Pabst	Charlene Quan
Ginny Pabst	Jennifer Quan
Kathleen Pabst	Kendall Quinn
Mark Pabst	Christopher Quock
Leonard Page	Jane Radcliffe
Mary Pagonas	Glenn Rahmlow
Sunny Pak	Sally Raikes
Heidi Palacios	Alicia Ramirez
Apple Pallarca	Jonathan Randall
Paul Palestine	Kamalesh Rao
Ming Pan	Megan Rathfon
Elizabeth Pannell	Fleurdeliza Rebara
Florence Pardini	Elizabeth Reed
Branden Park	Kenneth Reed
Jaime Parker	Joe Reggio
Jim Parkinson	Kathy Reichardt
Luba Parry	Anita Reichel
Dave Parsons	Cecil Reichert
Jeffrey Pasco	Louise Reiter
Nestor Pascual	Mary Renaker
Antonio Paulino	Erin Rentz
Monica Payne	Stacy Repin
Nancy Pease	Betty Reuter
Jean Pechin	Valarie Revels
Jean Perata	Jernajeol Reyes
Michel Perekrestenko	Andrew Reynolds
Annette Perry	Hugh Reynolds
Rebecca Peters	Julian Rhine
Dawn Peterson	Jean Ribardo
Angela Pettitt	Alexandrine Rich
Chris Petromilli	Dana Rich
Linda Pettigrew	Diane Richards
Nam Phan	Hunter Richards
Shawn Phillips	Elizabeth Rieger
Nancy Pickford	Nancy Riley
Guy Pilara	Gino Rinaldi
Sanford Plainfield	Glen Risdon
Betty Pollock	Ruby Risser
Yelena Polovinchik	Lois Roach
Joan Pont	Janet Robbins
Susan Poole	Jay Roberson
Barbara Pope	Mary Roberts
Michael W. Pope	Michael Roberts
Maya Potashnik	Charles Robinson
Cindy Poweri	John Rocco

Hase Rodenbaugh	Christine Schooley
Helen Rodgers	Elizabeth Schultz
Patricia Rodgers	Wende Schwake
Manuel Rodriguez	Harry Scott
Stacey Rodrigues	Norman (Jerry) Scott
Renee Roen	Ruth Scott
Scott Roen	Sara Seaton
Barbara Rogers	Frankie Seffens
Lelia Romero	Lesley Segedy
Jeanne Rose	Joan Serra
Anne Rosenthal	Jennifer Setten
Seth Rosenthal	Theresa Sevieri
Tinka Ross	Ashish Shah
Sissy Rossi	Penelope Shaner
Bill Roten	Albert Shell
Lois Roth	Fred Shelton
Daniele Rubcic	Peter Shepard
Elizabeth Ruck	William Shepherd III
Rachelle Ruiz	Jessica Sheppard
Rebecca Ruiz	Walt Shepps
Dorothy Rumney	Anthony Shew
David Russell	Naomi Shibata
Thea Ruzette	Jeanette Shinsako
Judy Ryan	Jack Shnider
Barbara Sabath	Michelle Shouse
Parry Sabath	Rodney Shu
Lola Safer	Hanna Silver
David Salgado	Marjorie Silver
Talia Salter	Shirley Silverstein
Sergei Samborski	Arthur Simpson
Grace Samson	Ron Simpson
Ivan Samuels	Margaret Singer
Diane Sands	Antony Singleton
Mary Ann Sanford	Beth Singleton
Alexandra Sangmeister	Eleanor Siperstein
Raymond Sante	David Siu
Guy Sapp	Clyde Smith
Sylvia Sapula	Jeffery Smith
Tina Saravia	Sheldon Smith
Victor Saravia	Sue Smith
Ben Saturen	Hector Socarras
Victoria Saxe	Katrina Socco
Maria Schaefer	Jody Soldevila
James Scheihing	Debbie Soler
Elise Schlick	Maria Solis
Marjorie Schmelzer	Kristen Sorensen
Herbert Schmidt	Eriza Sorenson
LaVerne Schmidt	Sarah Soule
Morgan Schmidt	Jill Spangenberg
Peter Schmidt	Connie Spanier
Harold Schneringer	Patricia Sparling
Julia Schoellenbach	Carol Spinali
Jacqueline Schonewald	Sherry Spitzer

Anita Spivack
Dimitri Spodine
Danette St. Onge
Maggie Stack
Cecine Stadden
Josh Standig
Barbara Stanton
Cathleen Stark
Nancy Stearns
Erin Steele
Ted Steffens
Joan Steinberg
Joan Emily Steinberg
Judy Stemen
Max Stepanian
Tanya Stepanian
Crystal Stern
Andrew Steyers
Edgar Stone
Paul Stout
Eric Strand
Nadia Strasser
Carol Straus
Mila Stroganoff
Kevin Sturm
Siuchi Suen
Amelia Sugarman
Shawn Sutherland
Ayako Suzuki
Marc Swanson
Nicole Swartz
Paul Swiatko
Alan Swithenbank
Isidore Szczepaniak
Edith Tabak
Nellie Taha
Sharif Taha
Evangeline Tai
Chikara Takahashi
Marilena Tamburello
Josephine Tan
Sabrina Tan
Fran Tannenbaum-Kaye
John Thai
Kristen Thomas
Marilyn Thompson
Margot Timberlake
Heather Tine
Fong-Yi Ting
Edith Tirado
Martin Tom
Kate Tomlin
Fujita Tomotake
Alice Tong
Cindy Tong

David Toren
Louise Torrace
Nicole Torres
Eric Tosaris
Sharon Toy-Choutka
Electra Bambi Truong
Pauline Tseng
Leilon Tsue
Eleanor Tucker
Jennifer Tucker
Patricia Tucker
Jonathan Tupy
Joyce Turowski
Mackenzie Tysell
Ruth Uchida
Carol-Ann Uetake-Shapiro
William Urban
Veronica Uy
Luke Vairo
Linda Vallee
Pam Van der Leeden
Derek van Orden
Jim Vann
Queta Vargas
Gloria Vasquez
Robert Venegas
Patricia Venturino
Joan Verdi
Denise Villa
Nick Villa
Ann Hazel Villanueva
Eleanor Visser
Debbie Vollick
Nataliya Volsrava
Frank Vuong
Kate Waffner
Aaron Walburg
Johnny Walker
Thomas Walker III
Kim Wallace
Sara Marie Wallace
Janet Walsh
Lesley Marie Walsh
Kim Walton
Sindy Wan
Wei-ying Wang
Jeff Warren
Tamara Warren
Delcey Watkins
Errol Watson
Kathleen Watson
Jeremie Wattellier
Peter Waugh
Barbara Webber

Merna Wechsler
Kimberley Wegesin
Xuan (Ray) Wei
Sarah Weigel
Daniel Watson Weller
Penny Wells
Mark Welte
Terri Werner
Ann Weybright
Walter Weybright
Sonya White
Simone Whitecloud
Alfred Wilcox
George Wilhelmsen
Shelly Willard
Eva Williams
Kimberly Williams
Paul Williams
Seaberry Williams
Marcella Williamson
Wilfred Willis
Dan Wilson
Douglas Wilson
Paul Winternitz
John Wion
Anna Wojdyla
Angela Won
Anjennette Wong
Diane Wong
Eva Wong
Jacky Wong
Kimberly Wong
Lillian Wong
Ophelia Wong
Joanna Woolman
Tracy Worthley
Sherrie Wren
Jonathan Xiong
May Yee
Earl Yorkey
Andy Young
Michael Young
Nyda Young
Tomme Young
Gloria Yu
Rosemary Saulino Yu
Anthony Yuen
Flora Zagorites
Jerry Zagorites
Renata Zakhuatkina
Verta Zanira
Steven Zarit
Amber Zarnett
Cay Zilka



## SCIENTIFIC PUBLICATIONS

### RESEARCH DIVISION

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##### Scientific Publications:

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**Klieger, P. Christiaan**. 2000. The Buried Island of Moku`ula in Maui located by Remote Sensing. *Site Saver*, Sacred Sites International Foundation. Berkeley, CA. IX(1):2-3. Spring-Summer.

\_\_\_\_\_. 2000. [Review] Development, Economy, and Environment in Tibet, by Graham Clarke (ed.) Wien: Österreichische Akademie Der Wissenschaften. Vol. 4, *Proceedings of the 7th Seminar of the Inter-national Association for Tibetan Studies*, 18-24 June, 1995, Schloß Seggau, 1998. Ernst Steinkellner (ed.). *Tibet Journal*, XXV (1):90-94. Spring.

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##### Scientific Publications:

Smith, D.G. and **J.E. McCosker**. 1999. Family Ophichthidae. Pp. 1662-1669 in Carpenter, K.E. and V.H. Niem (eds.) *FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific*. Vol. 3. *Batoid fishes, chimaeras and bonyfishes, Part 1*.

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**Almeda, F.** 2000. New Costa Rican and Panamanian species of *Miconia* (Melastomataceae: Miconieae). *Proc. Calif. Acad. Sci.* 52(4):33-54.

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**Fritsch, P.W.** 1999. Styracaceae. In: P.M. Jørgensen and S. León-Yáñez (eds.), Catalogue of the Vascular Plants of Ecuador, p. 922. *Missouri Botanical Garden Press*, St. Louis.

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**Fritsch, P.W.** and S.D. Lucas. 2000. Clinal variation in the *Halesia carolina* complex (Styracaceae). *Systematic Botany* 25:197-210.

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**Members of the Academy Travel program's Penguin Club with program manager Deidre Kernan (second from left).**

within the enigmatic tribe Justiceae (Acanthaceae). *Amer. J. Botany* 25:15-25.

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**Almeda, F.** 2000. Phyllis M. Faber: A Tribute. *Fremontia* 27(4):59-60.

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**Ghiselin, M.T.** 1999. Progress and the economy of nature. *J. Bioecon.* 1:35-45.

\_\_\_\_\_. 2000. Economic perspectives on the California Academy of Sciences. In: Peruna Nuova Museologia. Eds., G. Pinna and S. Suter. *ICOM*, Milano, 7-9.

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**Ghiselin, M.T.** 1999. Vassiliki Betty Smocovits. Unifying Biology: the Evolutionary Synthesis and Evolutionary Biology. *Isis* 90:406.

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Baranowski, R.M. and **H. Brailovsky**. 1999. A new species of *Hadrosomus* (Hemiptera: Heteroptera: Lygaeidae: Lygaeinae) from the Dominican Republic. *Fla. Entomologist* 82(4): 595-599

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\_\_\_\_\_. 1999. A Review of the Costa Rican Species of *Mozena* Amyot and Serville, with descriptions of three new species (Hemiptera: Heteroptera: Coreidae: Coreinae: Nematopodini). *Trans. Amer. Entomol. Soc.* 125(4): 419-432.

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\_\_\_\_\_. 2000. Revision of the Genus *Lobogonius* (Hemiptera: Coreidae: Coreinae: Colpurini). *Ann. Entomol. Soc. Am.* (2): 177-184.

**Brailovsky, H.** and E. Barrera. 1998. The genus *Empedocles* Stal and description of one new species (Hemiptera: Coreidae: Coreinae: Acanthocephalini) from South America, J. *New York Entomol. Soc.* 106(4): 141-149.

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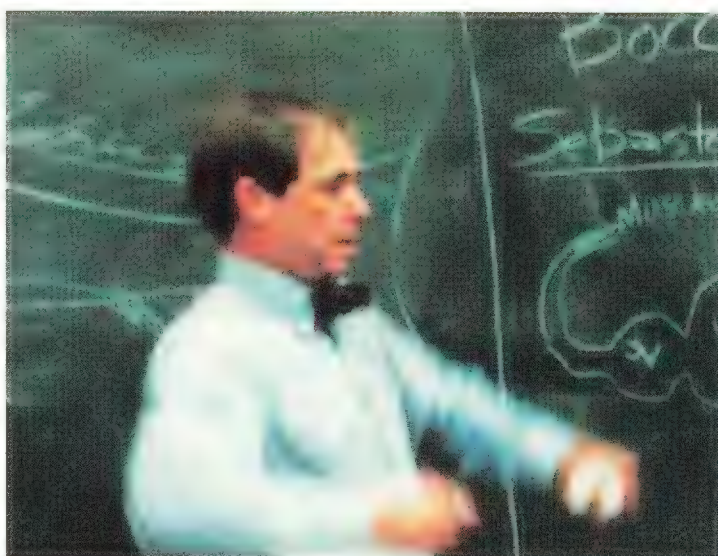
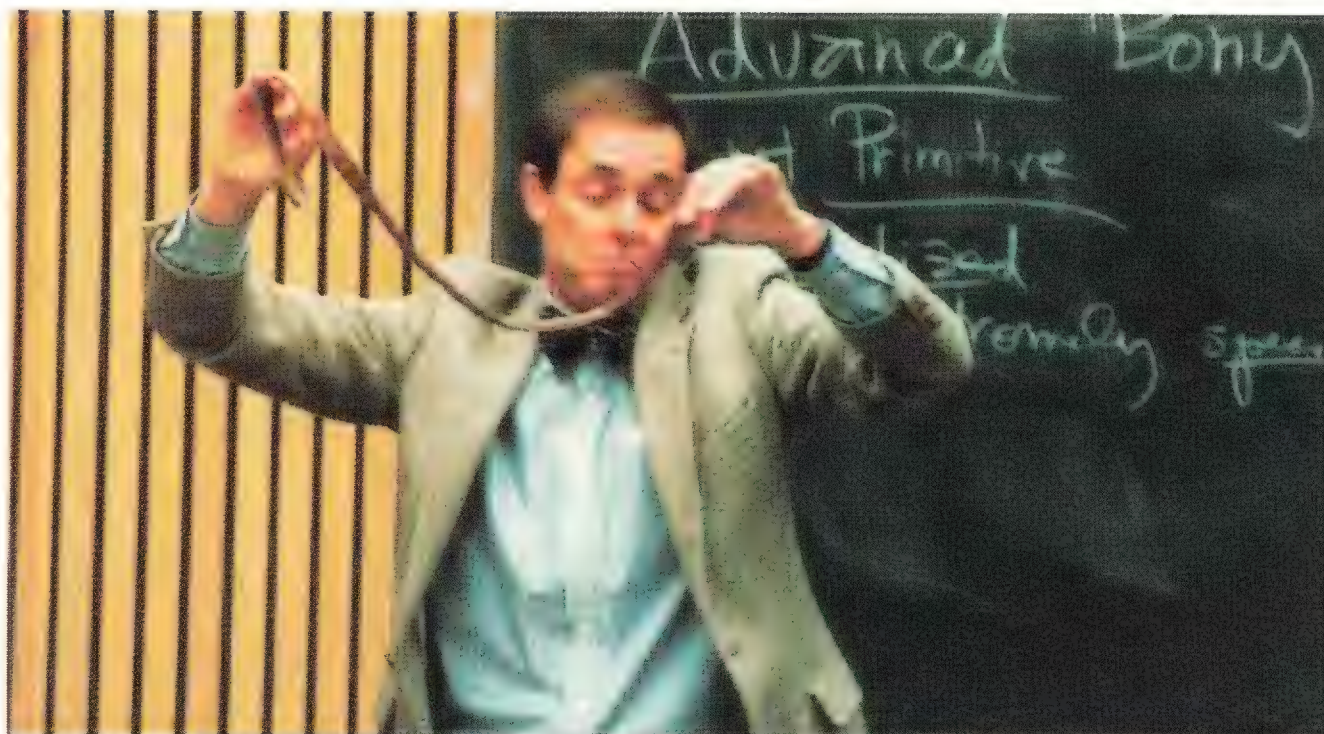
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Janice Wiechniak  
*Custodian I*  
Robert Vellegas  
*Night Foreman*  
Carl Jones

## Auto Service

*Auto Service Technician*  
Jeff Camargo

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Susan Cratty  
*Shift Supervisor*  
Lulu Mason  
*Cashier/Facilitator*  
Bonnie Chiang  
Nancy Cowhig  
Leonila David  
Minerva Espiritu  
Heather Kuo  
Rudy Lara  
Gloria Manabat  
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## Mailroom

*Mailroom Supervisor*  
Anna Maria Von Korner  
*Mailroom Technician*  
Johnnie Hickman

## Security

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*Hourly Shift Supervisor*  
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Willam Excline  
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Rebecca Rozewicz  
Paul Woolf

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Mansour Alowdi  
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Daniel Gaghin  
Mario Gonzales  
Mohammad Kanna  
Hugh Kwok  
Elias Lebbos  
Tommy Meisel  
Lenny Melendrez  
Gregory Moore  
Henry Ortiz  
Juan Padilla  
Deneshia Taylor  
Larry Toji  
Roland Villanueva  
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Leora Anderson

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*Administrative Assitant*  
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*Accountant*  
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*Membership Services Coordinator*  
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Sheila Waterkamp (*from 01/99*)  
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*Assistant Buyer*  
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*Lead Sales Clerk*  
Jamie Bostick  
Meaghen Blakely  
*Sales Clerk*  
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Nora Abdoun  
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Travis Brown  
Luther Coffey  
Veronica DeJesus  
Erica Garcia  
Karen Glosson  
Linda Gregorio  
Dirk Hoekstra  
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Oymon Leong  
Katherine Ralph  
Jessica Rivera  
Jenani Salaver  
Brian Schirmer  
Lisa Stephens  
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*Secretary*  
Maureen Bourbin  
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Joyce Gilio-Stern  
*Exhibit Developer*  
Lyla El-Shamy  
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Marco Centin  
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Rebecca Wells

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Jo-Ann Tamaki  
*Exhibit Preparators*  
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Dong Lin

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Bing F. Quock  
*Administrative Assistant*  
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*Astronomy Assistant*  
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A. John Weight  
*Technician*  
Dave Carness  
*Evaluator*  
Richard Sanjour  
*Laserist*  
Steve Shapiro  
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Ronald Dammann  
Catherine Langridge  
Benjamin Mendelsohn  
David Rodrigues  
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Sandy Farmer  
Rynda Hudman  
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Lorena Ramirez  
Cynthia Sedik  
Dominika Tulik  
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Yuan Bartholomew  
Bari Brown  
Jesson Coon  
Anoush Ekparian  
Richard Filer-Gamble  
Marcelle Haggard  
David Levenson  
Emily Mitchell  
Jesse Mitchell  
Andrina Perotti  
Joseph Wong

## STEINHART AQUARIUM DIVISION

*Division Director and Superintendent*  
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Francis X. Glennon  
Kenneth Howell  
William Rohrs  
*Aquatic Biologist II*  
Mike Boyle  
Dave Chan (*was Biol. 1*)  
Jorge Gomezjurado (*to 07/99*)  
Carey Linder (*to 05/00*)  
Peter Miller  
William Shepherd  
Helen Tozer (*was Biol. 1*)  
*Aquatic Biologist I*  
John Greiner  
Angela Pettit (*from 03/00*)  
Pamela Schaller (*from 03/00*)  
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David White (*to 8/99*)  
Jeremy Sarrow (*from 8/99*)  
*Salmon Project*  
Jeremy Sarrow (*to 8/99*)  
Mike Johnson  
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Freeland Dunker  
*Pat biologist*  
Patricia Morales  
*Microbiologist*  
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Christopher Doller  
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Jonathan K.L. Mee  
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Lane Chrisman (*from 07/99*)  
*Stationary Engineer*  
Toni Amelung (*from 07/99*)  
Lane Chrisman (*to 07/99*)  
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Ken Hangartner  
Mark Mayfield  
Jamie Padover  
Bill Parham  
Todd Robinson  
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Nina Jablonski  
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Russell Hartman  
*Curatorial Assistant*  
Dinah Crawford  
*Traditional Arts Supervisor*  
June Anderson





**From left: Entomologist, Darrell Ubick; Photographer Dong Lin; Pathologist Patricia Morales instructs intern Alondro Blandon.**

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**Senior Secretary**  
 Maria Tom  
**Research Associate**  
 Susan Antón  
 Karen Bruhns  
 Diane Carroll  
 Charles Cecil  
 George Chaplin  
 Lawrence Desmond  
 Dennis Etler  
 Walter Hartwig  
 Catherine Julien  
 Craig Kirkpatrick  
 Christiaan Kleiger  
 Ruthann Knudson  
 Michael Moratto  
 John Rick  
 Merle Robertson  
 Arthur Rostoker  
 Sandra Smith  
 Andrea Taylor  
 Karla Wesley

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**Research Associate**  
 William J. Bennetta  
 Al Giddings  
 Michael D. Lagios  
 Richard H. Rosenblatt  
 Leighton R. Taylor, Jr.  
 Norbert Wu

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 George Lindsay  
**Curator Emeritus**  
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**Senior Curatorial Assistant**  
 Mona Bourell  
**Curatorial Assistant**  
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 Lee Boerger  
 Steven Corso  
 Linda Liebelt  
 Carole Litwin  
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 Alva Day

Barbara Ertter  
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 Clare B. Hardham  
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 John L. Strother

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 Catherine Best  
 Mary L. Butterwick  
 Greg de Nevers  
 Barbara Keller  
 Irja Knight  
 Walter Knight  
 DeAda Mally  
 Orbelia Robinson  
 David Toren  
 Mary P. Wells

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**Senior Curator and Director of Research**  
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 and **Assistant Curator**  
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 Suzanne Ubick (from 04/00)  
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 Julieta F. Parinas  
**Research Associate**  
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 William F. Barr  
 Francis L. Blanc  
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 John T. Doyen  
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Alan R. Hardy  
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 C. Don MacNeill  
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 Evert I. Schlinger  
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 W. David Sissom  
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 Elwood C. Zimmerman

#### **Associate**

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 Patrick R. Craig  
 John E. Latke  
 Robert W. L. Potts

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**Curator**  
 Alan E. Leviton  
**Assistant Curator**  
 Joseph Slowinski  
**Senior Collections Manager**  
 Jens V. Vindum  
**Biogeographical Systems Coordinator**  
 Michelle S. Koo  
**GIS Technician**  
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**Curatorial Assistant**  
 Lindsay Henwood  
 Rhonda Lucas  
 Craig Reading (NSF to 02/00)  
 Ricka E. Stoelting (from 12/99)  
 Kevin D. Wiseman (NSF to 02/00)  
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 Guin Wogan  
**Research Associate**  
 Angel C. Alcalá  
 Michele L. Aldrich  
 Steven C. Anderson  
 Aaron M. Bauer  
 Walter C. Brown  
 Joseph F. Copp  
 Kevin de Queiroz  
 Michael Golubev  
 Harry W. Greene  
 Kim M. Howell  
 Mark R. Jennings  
 James E. Lawry  
 Robin Lawson  
 Gopinathan Menon  
 Malcolm R. Miller  
 Wallace J. Nichols  
 Theodore J. Papenfuss

Jeffery A. Wilkinson  
**Field Associate**  
 Ed Ely  
 Christofer F. Reldman  
 Robert N. Fisher  
 Philip G. Frank  
 John Tashjian  
 Bruce F. Toloski  
**Associate**  
 Brett Stearns

#### **Ichthyology**

**Curator and Chair**  
 Tomio Iwamoto  
**Senior Curator**  
 William N. Eschmeyer  
**Senior Collections Manager**  
 David Catania  
**Curatorial Assistant III**  
 Jon Fong  
**Imaging Technician**  
 Sara Pringle (NSF from 11/99)  
**Research Assistant, Technician and Secretary**  
 Mysi Hoang  
**Research Associate**  
 Margaret G. Bradbury  
 Daniel M. Cohen  
 Carl J. Ferraris  
 Robert N. Lea  
 Douglas Long  
**Field Associate**  
 George Zorzi

#### **Invertebrate Zoology and Geology**

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 Richard J. Mooi  
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 Terrence M. Gosliner  
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**Adjunct Curator**  
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**Research Scientist**  
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**Curatorial Assistant**  
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 April Devitt  
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 Mike Johnson

Erin Rempala-Kim  
 Molli MacDonald  
 Chris Mah  
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 Karren Elsbernd  
 Mary Renaker

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 Carrie Burroughs  
**Oral Historian**  
 Adrian Barnett  
**Research Associate**  
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 Sam Wilson

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**Curatorial Assistant**  
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 Andrea Jesse  
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 J. Dan Webster  
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#### **Pepperwood Ranch Natural Reserve**

**Resident Biologist**  
 Michael Gilogly

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 Jeff Castle (02-05/00)  
**Curator**  
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**Grants Officer**  
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**Youth & Adult Courses Manager**  
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 Sue Chamberlain (03/00)  
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**Careers in Science Manager**  
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 Don Garcia  
**Field Studies Manager**  
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 Joe Kinyon  
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 Zak Zide (to 5/00)  
 Pamela Dupzyk (from 05/00)  
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 Pamela Dupzyk (to 05/00)  
 Jeff Castle (from 06/00)  
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 Janet Robbins

#### **Volunteer Services**

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**Volunteer Coordinator**  
 Rosalind Henning  
**Docent Coordinator**  
 Kathleen Lilienthal



## BALANCE SHEET

30 June, 2000 with comparative totals for 30 June, 1999

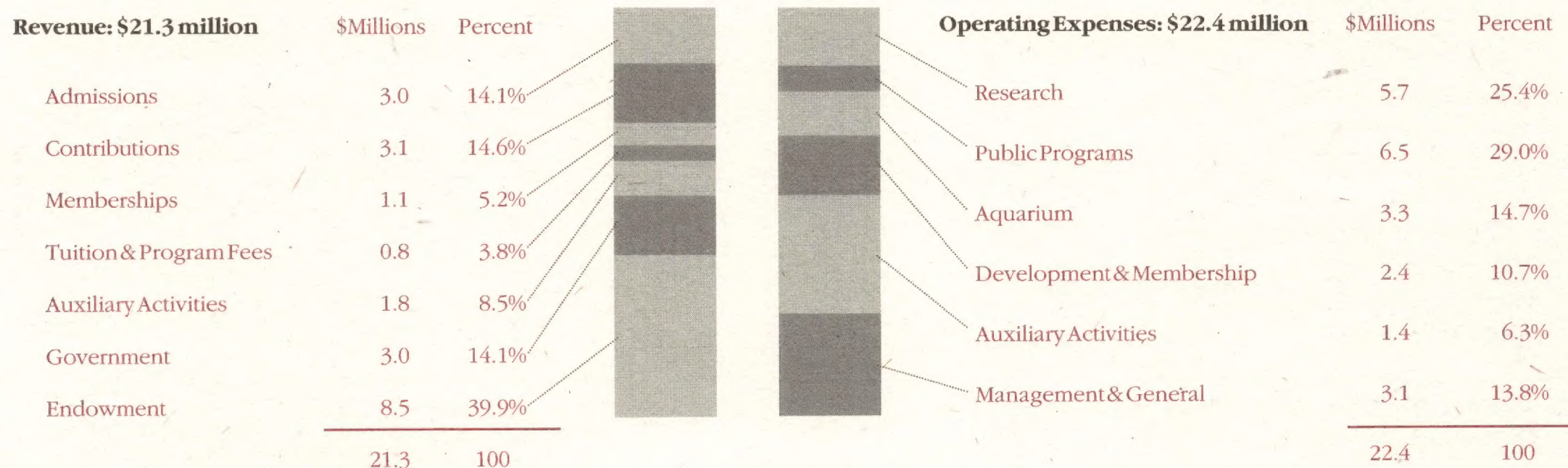
Assets	Operating	Plant	Endowment	Total All Funds	
				2000	1999
Cash & Equivalents	436,209	15,210		451,419	648,412
Marketable Securities	1,820,513	37,083,165	148,450,909	187,354,587	146,388,054
Receivables:					
Research Grants	305,721			305,721	211,881
Interest & Dividends	614,564	737,548		1,352,112	508,609
Other	174,575	219,941		394,516	327,648
Contributions	51,559		750,000	801,559	1,230,855
Due (to) from other funds	(483,918)	(417,621)	901,539		
Inventory	473,509			473,509	421,109
Prepaid Expenses	251,722	1,536		253,258	278,767
Investments held in Trust			4,809,123	4,809,123	3,948,528
Property & Equipment at cost, less accumulated depreciation	35,780,460		35,780,460	35,408,145	
<b>Total Assets</b>	<b>3,644,454</b>	<b>73,420,239</b>	<b>154,911,571</b>	<b>231,976,264</b>	<b>189,372,008</b>
<b>Liabilities &amp; Net Assets</b>					
Accrued Expenses & Other Liabilities	1,308,416		77,042	1,385,458	1,594,064
Deferred Income	233,619			233,619	142,546
Annuities Payable			2,097,903	2,097,903	1,830,817
<b>Total Liabilities</b>	<b>1,542,035</b>		<b>2,174,945</b>	<b>3,716,980</b>	<b>3,566,727</b>
Unrestricted Net Assets					
Available for Operations	620,364		8,372,000	8,992,364	8,328,438
Designated for Long-Term		35,780,460		35,780,460	35,408,145
Designated for Endowment			121,466,906	121,466,906	106,362,674
Total Unrestricted	620,634	35,780,460	129,838,906	166,239,730	150,099,257
Temp Restricted Net Assets	1,482,055	37,639,779	2,152,700	41,274,534	16,323,705
Perm Restricted Net Assets			20,745,020	20,745,020	19,382,319
<b>Total Net Assets</b>	<b>2,102,419</b>	<b>73,420,239</b>	<b>152,736,626</b>	<b>228,259,284</b>	<b>185,805,281</b>
<b>Total Liabilities     &amp; Net Assets</b>	<b>3,644,454</b>	<b>73,420,239</b>	<b>154,911,571</b>	<b>231,976,264</b>	<b>189,372,008</b>



# STATEMENT OF ACTIVITIES

Years ended June 30, 2000 and 1999

Changes in Net Assets	Operating	Plant	Endowment	Total All Funds	
				2000	1999
Revenue & Gains					
Admissions	2,994,839			2,994,839	3,184,547
Contributions	3,101,533	25,351,047	4,861,686	33,314,266	9,261,042
Memberships	1,079,169			1,079,169	1,073,425
Tuition & Program Fees	868,832			868,832	738,173
Auxiliary Activities	1,773,149			1,773,149	1,908,340
Government Grant Income	842,807	946,027		1,788,834	687,768
City & Co of San Francisco	2,178,304			2,178,304	1,696,943
Investment Income	3,497,109	960,476		4,457,585	5,097,971
Net Realized & Unrealized Gains on Long-Term Investments	4,975,043	136,962	13,542,954	18,654,959	14,132,046
Total Revenue & Gains	21,310,785	27,394,512	18,404,640	67,109,937	37,780,255
Expenses					
Research	5,665,526	534,643		6,200,169	5,779,858
Public Programs	6,553,133	559,084		7,112,217	6,647,313
Aquarium	3,284,752	310,093		3,594,845	3,175,812
Development & Membership	2,370,524	730,992		3,101,516	2,658,811
Auxiliary Activities	1,451,386	59,574		1,510,960	1,490,522
Management & General	3,084,290	51,937		3,136,227	2,350,080
Total Expenses	22,409,611	2,246,323		24,655,934	22,102,396
Transfers Between Funds					
Capital Expenditures	(739,930)	739,930			
Other Transfers	114,917	(114,917)			
Increase/(Decrease) in Net Assets	(1,723,839)	25,773,202	18,404,640	42,454,003	15,677,859
Net Assets Beginning of Year	3,826,258	47,647,037	134,331,986	185,805,281	170,127,422
Net Assets Year End	2,102,419	73,420,239	152,736,626	228,259,284	185,805,281





## ACKNOWLEDGEMENTS

*Project Manager and Writer:* **Keith Howell**

*Art Direction and Graphic Design:* **Susan Schneider**

*Editorial Assistant:* **Suzanne Ubick**

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*p. 3 (Earth Day):* Weber Shih

*p. 5 (Nina Jablonski):* George Chaplin

*(Field team):* Nina Jablonski

*p. 7 (lower):* Susan Middleton

*p. 9 (tango dancers):* Tango A. Media Luz

*p. 11 (Earth Day):* Weber Shih

*p. 12 (Pepperwood):* Kellyx Nelson

*(Wild Cty):* Pamela Dupzyk

*p. 15:* Pamela Dupzyk

*p. 22–23:* Betty Pollock

*p. 24 (Al Shell):* Weber Shih


*p. 28:* Betty Pollock

*p. 31 (Dong Lin):* Betty Pollock

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